

# Cloth Dyeing Mill Reduces H<sub>2</sub>S, Costs and Complaints With ProSweet\* OC Series Products

## Challenge

The effluent of a large cloth dyeing mill was highly loaded with sulfur-bearing dyes. These dyes are a major source of bacteria-generated hydrogen sulfide (H<sub>2</sub>S).

Neighbors and employees complained about the foul odors coming from the plant. In response to the complaints, the city set up perimeter monitors and threatened fines if the odor situation persisted.

Detected levels of H<sub>2</sub>S in the process water entering the wastewater pretreatment facility ranged from 5 to 10 ppm (mg/L). H<sub>2</sub>S in the air above the clarifier effluent pits averaged 40 ppm (mg/L), and 2 to 5 ppm (mg/L) of H<sub>2</sub>S existed throughout the remainder of the treatment facility.

In addition to generating offensive odors, the H<sub>2</sub>S increased the corrosive nature of the process water, resulting in severe attack of the metal and concrete components of the facility.

Several treatment programs were either tried or considered in an attempt to address the H<sub>2</sub>S problems. Hydrogen peroxide was tried, but large amounts were needed and yielded only a modest H<sub>2</sub>S reduction that did not eliminate the odor complaints; potassium permanganate and carbon particle treatments were considered but not implemented due to a number of application and performance-related concerns.

## Solution

GE Water & Process Technologies initiated a ProSweet Odor Control program. A ProSweet OC series product designed to prevent the formation of H<sub>2</sub>S was fed first. Next, ProSweet OC technology that contains naturally occurring enzymes and surfactants that prevent the subsequent regeneration of H<sub>2</sub>S were used. Feed points and monitoring criteria were set up, and plant personnel were trained on how to monitor H<sub>2</sub>S levels.

## Results

H<sub>2</sub>S levels in the cloth dyeing mill decreased to non-detectable limits.

Complaints from neighbors and employees ceased, and the city removed its monitors and dropped its threats of fines. Based on the plant's calculation, the ProSweet OC program saved the plant US\$1,200/week over alternative solutions.



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